

# GEORGE ENGELMANN BOTANICAL NOTEBOOKS

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Since many of the items lack a specific  
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cataloging the materials.*

	Jan.	Feb.	Mar.	Ap <sup>l</sup> .	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861	32.2	40.4	44.8	58.1	64.1	76.9	77.5	78.6	69.1	57.9	46.0	39.7	57.1° F.
1862	28.9	30.2	43.2	55.0	69.7	75.1	81.2	80.7	72.1	57.3	42.6	41.3	56.4° F.

RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Ap <sup>l</sup> .	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861	72.2	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5
1862	85.3	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8

III. Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of 6, 9, 12, 3, 6 and 9, from morning till night, based upon daily observations at these hours through the years 1861 and 1862, at St. Louis, Mo.

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.
1861	8.6	10.0	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	7.3	8.1	6.8

TEMPERATURE.

1861	48.9° F...	54.9	61.6	63.6	59.3	54.3
1862	48.9	55.0	60.9	62.3	58.0	53.6

RELATIVE HUMIDITY.

1861	86.4	71.3	60.3	57.2	65.1	77.3
1862	85.3	70.6	60.0	57.5	67.6	78.0

270-1



0 1 2 3 4 5 6 7 8 9 10

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MISSOURI  
BOTANICAL  
GARDEN

MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS

9220

	MERCURY.		ELECTRICITY.		or V.		ELECTRICITY.	
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.
Jan.....	179	179	3	5	2	40°	40°	
Feb.....	162	166	6	2	34	33		
March ...	168	179	15	8	30	48		
April ...	157	157	12	22	33	52		
May ....	171	180	17	5	25	32		
June ...	162	143	5	2	16	21		
July....	183	153	3	8	24	14	11	
August ..	176	143	5	4	40	15	19	
Sept.....	169	117	1	1	10	61	18	23
Oct.....	162	143	4	3	20	41	33	35
Nov....	172	157	2	7	6	16	42	42
Dec.....	175	166	5	0	6	17	37	35
	2046	1883	78	67	59	225	42°	52°



0 1 2 3 4 5 6 7 8 9 10  
cm

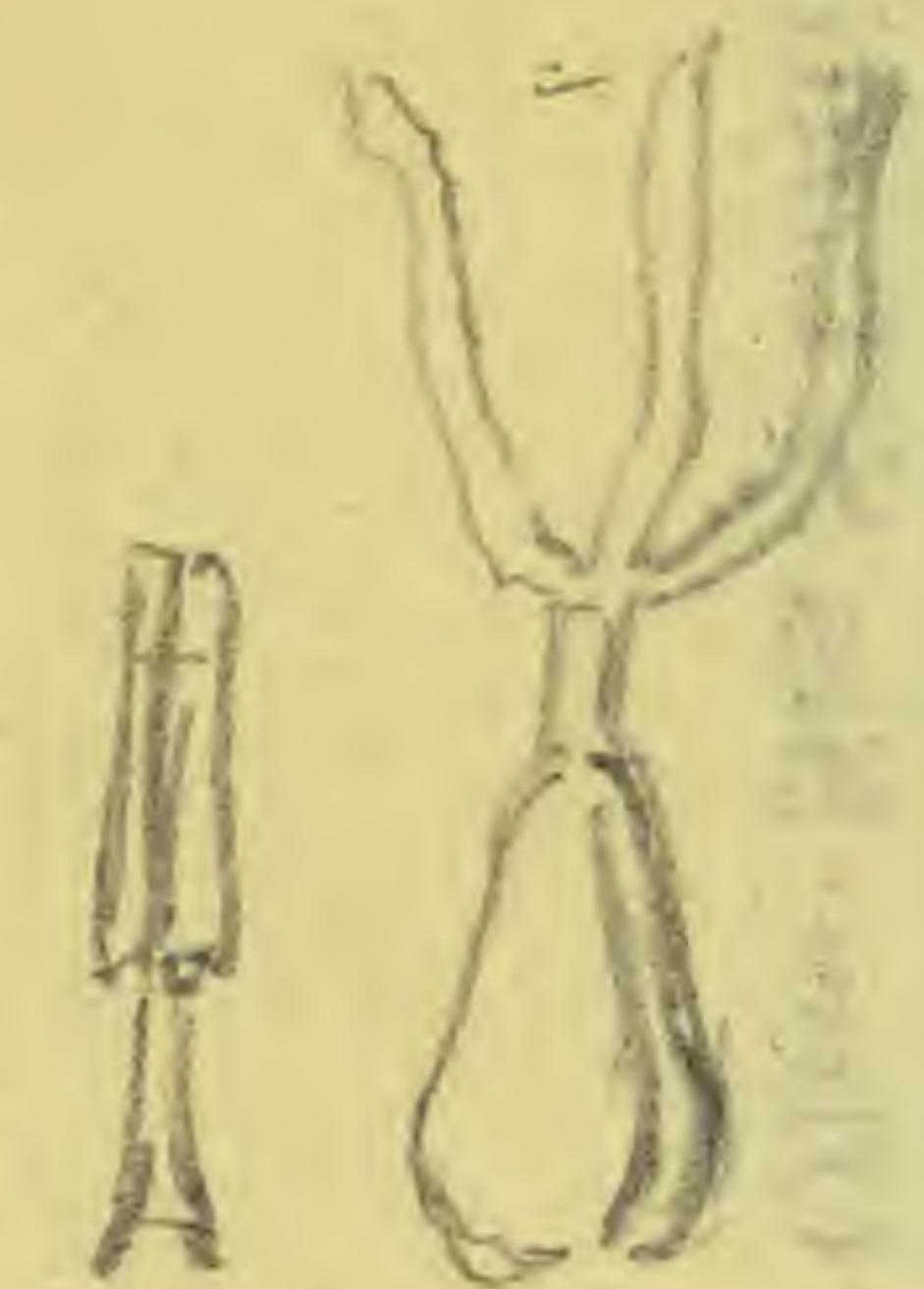
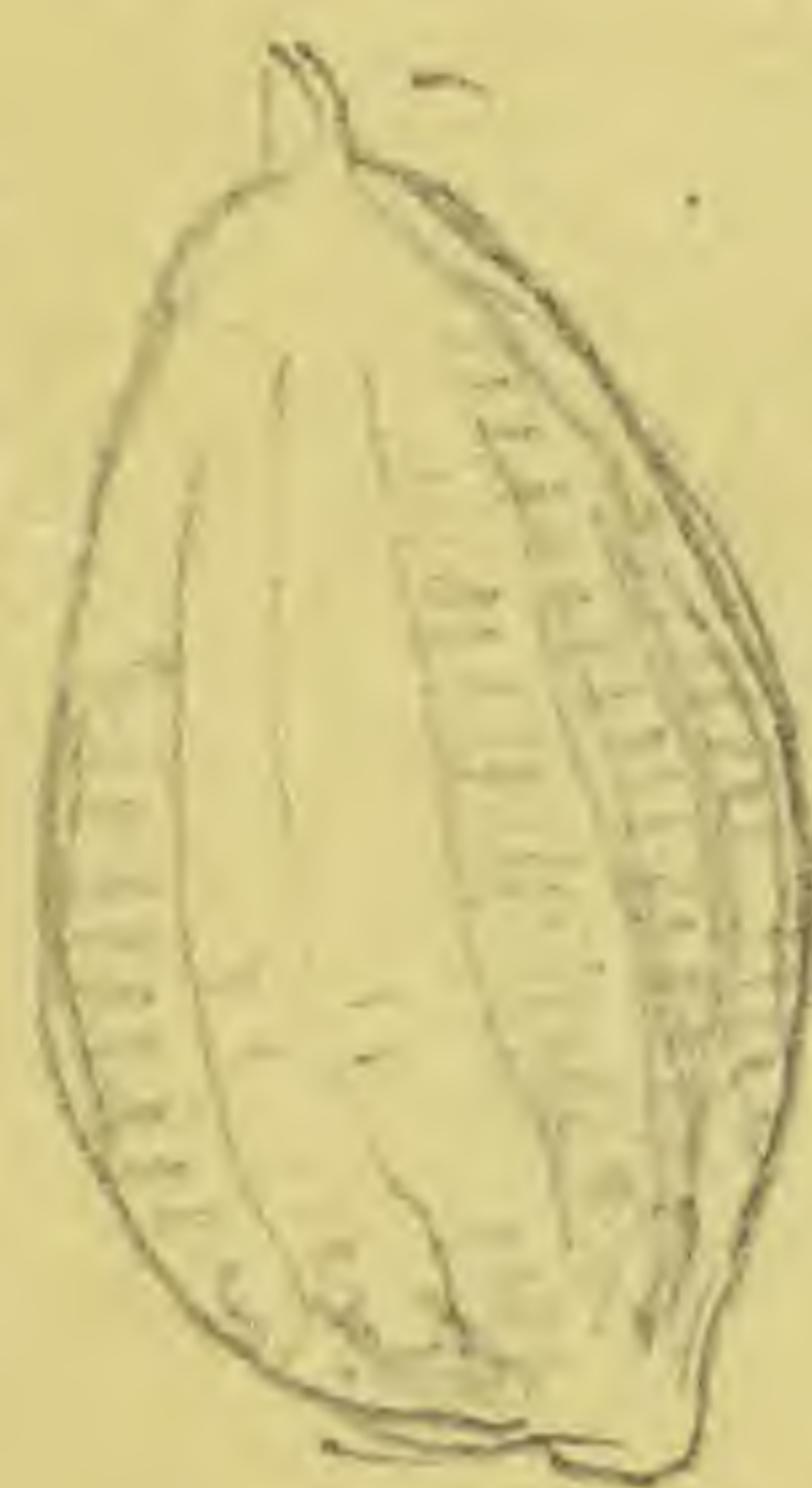
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GARDEN

*Inonotus cecropiae*  
France

Aug 15 1865



0 1 2 3 4 5 6 7 8 9 10

cm

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BOTANICAL  
GARDEN

((( ALEX. LEITCH ))  
APOTHECARY & PHARMACEUTIST  
Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

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1226



0 1 2 3 4 5 6 7 8 9 10

cm

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BOTANICAL  
GARDEN

*J. bulbosus*

sy. 55



Banks fl. 1824



0 1 2 3 4 5 6 7 8 9 10

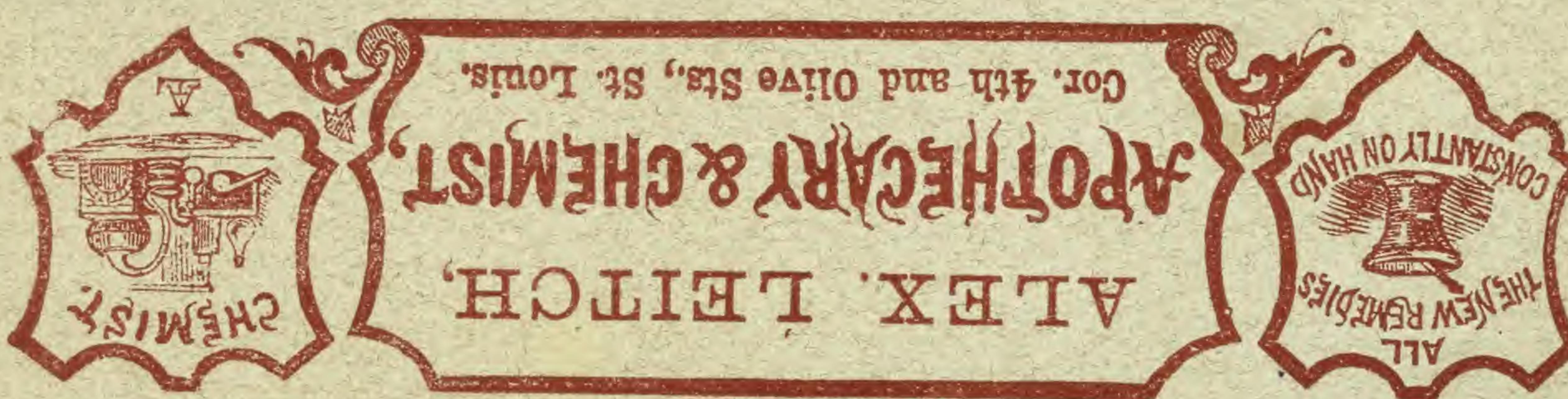
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BOTANICAL  
GARDEN

— ENGELEMAN PAPERS —  
MISSOURI BOTANICAL GARDEN



226



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

*J. Chamissonsii* 17th

En. III. 248

TEMPERATURE.												Mean of Year.
Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1861...32.2	40.4	44.8	58.1	64.1	76.9	77.5	78.6	69.1	57.9	46.0	39.7	57.1° F.
1862...28.9	30.2	43.2	55.0	69.7	75.1	81.2	80.7	72.1	57.3	42.6	41.3	56.4° F.

RELATIVE HUMIDITY.

RELATIVE HUMIDITY.												Mean of Year.
Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1861...72.2	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5
1862...85.3	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8

III. Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of 6, 9, 12, 3, 6 and 9, from morning till night, based upon daily observations at these hours through the years 1861 and 1862, at St. Louis, Mo.

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.
1861	8.6	10.0	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	7.3	8.1	6.8

TEMPERATURE.

1861	48.9° F...	54.9	61.6	63.6	59.3	54.3
1862	48.9	55.0	60.9	62.3	58.0	53.6

RELATIVE HUMIDITY.

1861	86.4	71.3	60.3	57.2	65.1	77.3
1862	5.3	70.6	60.0	57.5	67.6	78.0

273



0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
cm

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GARDEN

9223

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112191

V. *Positive or Negative Electricity in the Observations of '61 & '62.*

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.		Highest Positive Electricity.	
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.
Jan.....	179	179	3	5			40°	40°
Feb.....	162	166	6	2			34	33
March...	168	179	15	8			30	48
April....	157	157	12	22			33	52
May.....	171	180	17	5			25	32
June....	162	143	5	2			16	21
July.....	183	153	3	8	1	20	14	11
August..	176	143	5	4	1	24	15	19
Sept.....	169	117	1	1	6	40	18	23
Oct.....	162	143	4	1	10	61	33	35
Nov....	172	157	2	3	20	41	42	42
Dec....	175	166	5	7	6	16	37	35
	<b>2046</b>	<b>1883</b>	<b>78</b>	<b>67</b>	<b>59</b>	<b>225</b>	<b>42°</b>	<b>52°</b>



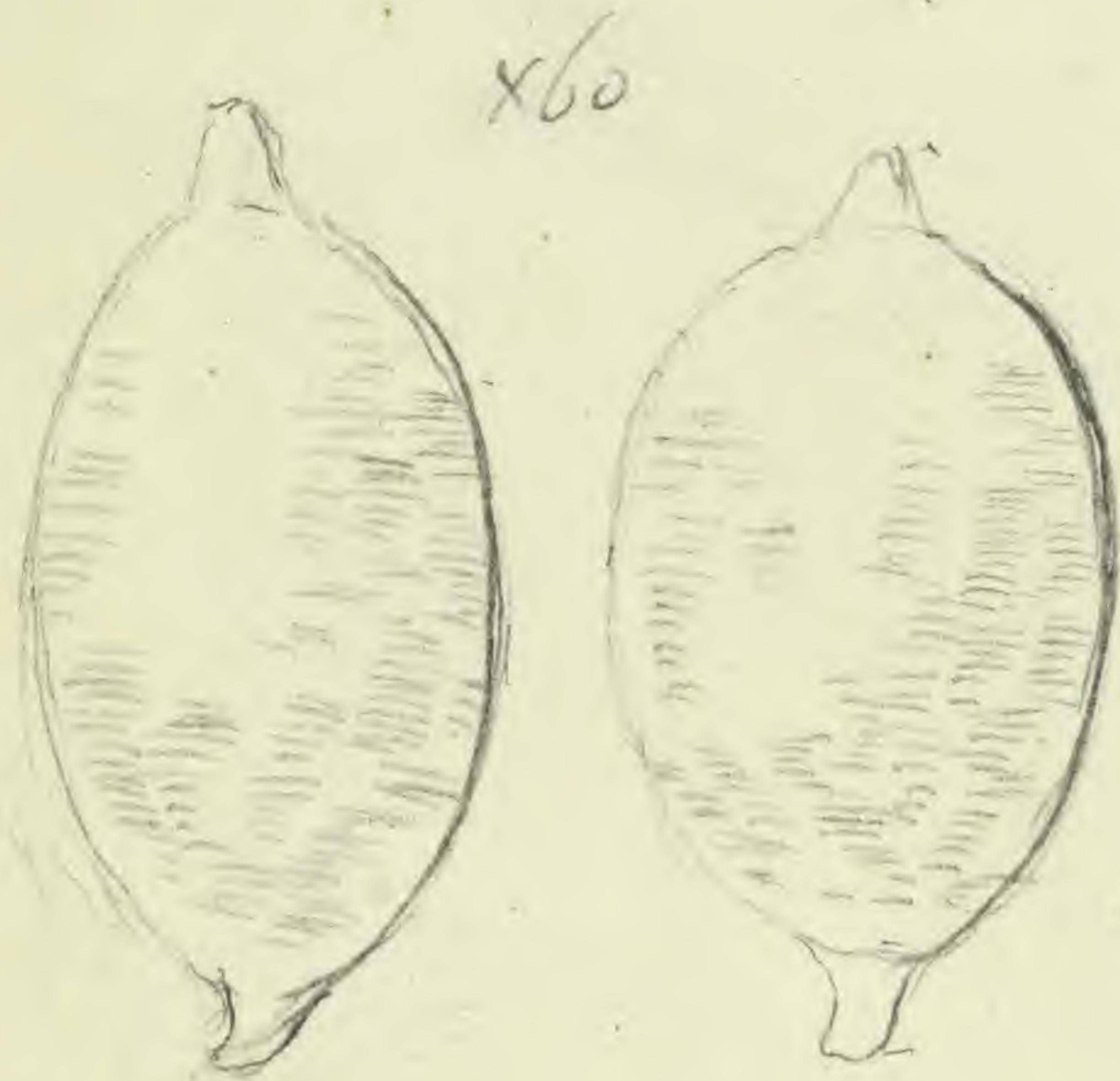
0 1 2 3 4 5 6 7 8 9 10  
cm

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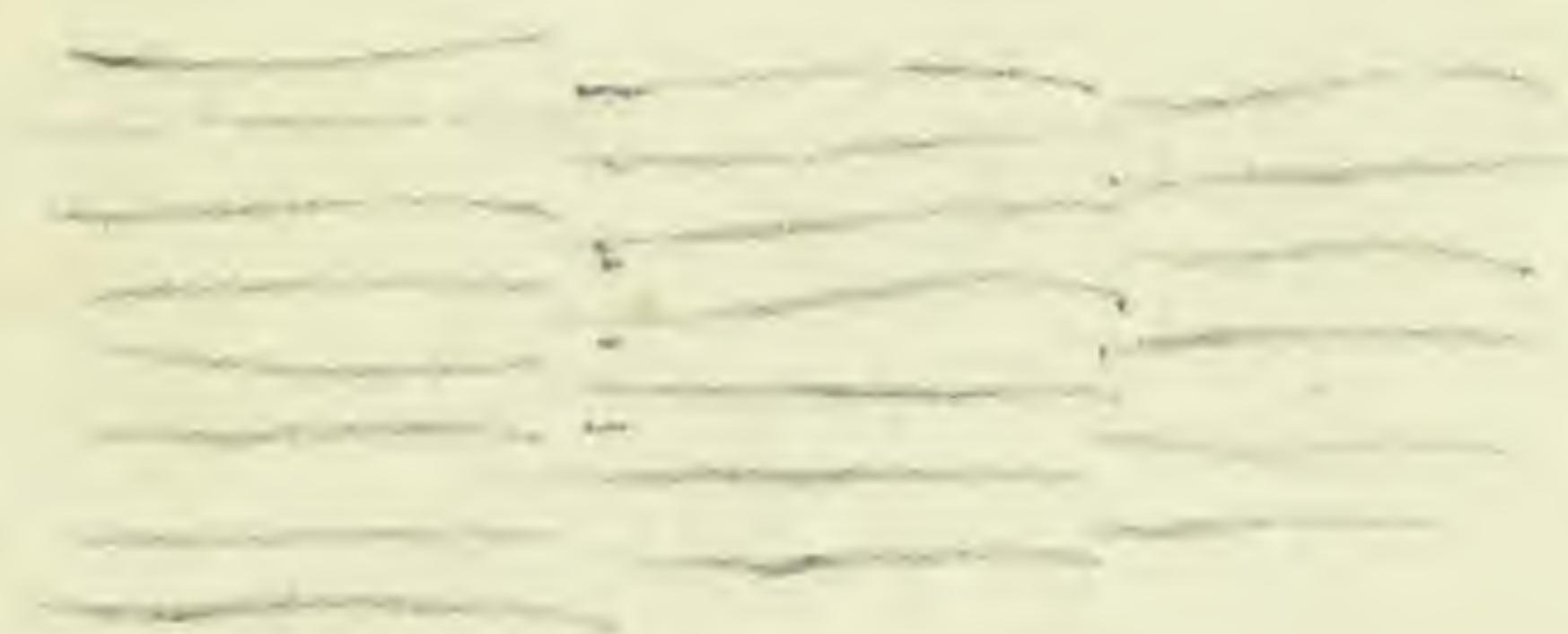


MISSOURI  
BOTANICAL  
GARDEN

"*Tunus Chamissoi* Klt" Febr 6 1867  
Ex H.G. Mull Paris 1866



no distinct ribs visible  
circulations very delicate



x10



0 1 2 3 4 5 6 7 8 9 10

cm

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BOTANICAL  
GARDEN

Alex. Leitch,  
APOTHECARY & CHEMIST,

Cor. 4<sup>th</sup> & Olive Sts., St. Louis.

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9224



0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN

1861...32.2 40.4 44.8 58.1 64.1 76.9 77.5 78.6 69.1 57.9 46.0 39.7 57.1° F.  
1862...28.9 30.2 43.2 55.0 69.7 75.1 81.2 80.7 72.1 57.3 42.6 41.3 56.4° F.

RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5	69.5
1862	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8	69.8

III. *Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of 6, 9, 12, 3, 6 and 9, from morning till night, based upon daily observations at these hours through the years 1861 and 1862, at St. Louis, Mo.*

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.	
1861	8.6	10.0	9.2	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	9.1	7.3	8.1	6.8

TEMPERATURE.

	1861	1862	1861	1862	1861	1862	1861	1862	1861	1862	1861	1862
48.9° F...	54.9	55.0	61.6	60.9	63.6	62.3	59.3	58.0	54.3	53.6		

RELATIVE HUMIDITY.

1861	86.4	71.3	60.3	57.2	65.1	77.3						
1862	85.3	70.6	60.0	57.5	67.6	78.0						

274-283



0 1 2 3 4 5 6 7 8 9 10  
cm

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BOTANICAL  
GARDEN

Positive & Negative ~~and~~ in the Observations of '61 & '62.

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.	Highest Positive Electricity.
	1861.	1862.	1861.	1862.		
Jan.....	179	179	3	5	2	40°
Feb.....	162	166	6	2	3	34
March ...	168	179	15	8	1	30
April ...	157	157	12	22	3	33
May ...	171	180	17	5	1	25
June ...	162	143	5	2	20	16
July ...	183	153	3	8	8	21
August...	176	143	5	4	1	14
Sept....	169	117	1	1	6	15
Oct....	162	143	4	3	10	19
Nov....	172	157	2	7	20	18
Dec....	175	166	5	0	6	23
	2046	1883	78	67	59	42°
					225	52°

MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS

9225



0 1 2 3 4 5 6 7 8 9 10  
cm

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BOTANICAL  
GARDEN

*Amomum buforioides*

Aug 15 1865

x60



x10

Bentley 1824



filament  
twice as long  
as anther



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

9226

ALEX. LEITCH,  
APOTHECARY & PHARMACEUTIST,  
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0 1 2 3 4 5 6 7 8 9 10

cm

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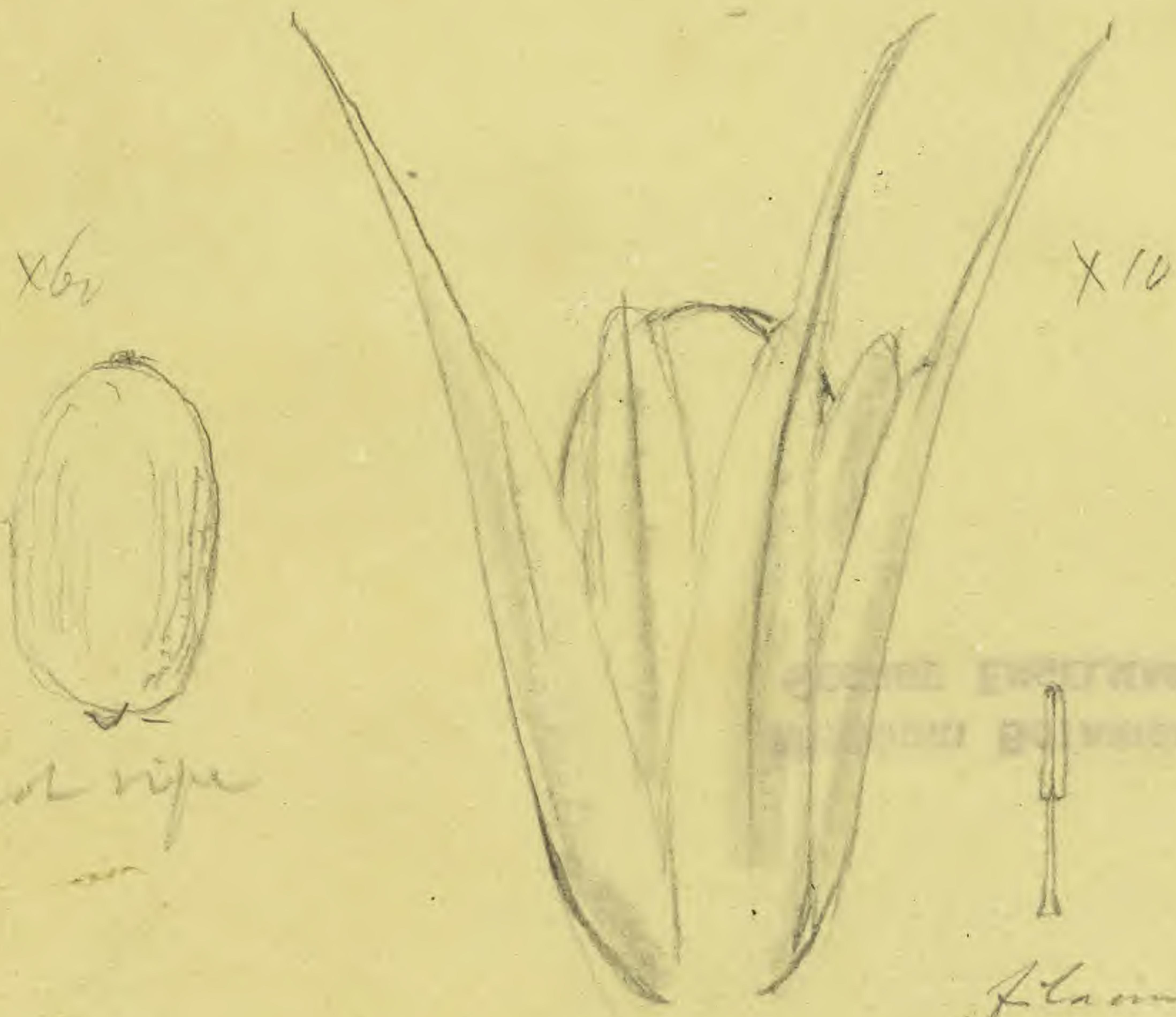


MISSOURI  
BOTANICAL  
GARDEN

*Linum leptocephalum*

Aug 15 1865

Colombia, Hall. 557



flame  
as long as  
anther



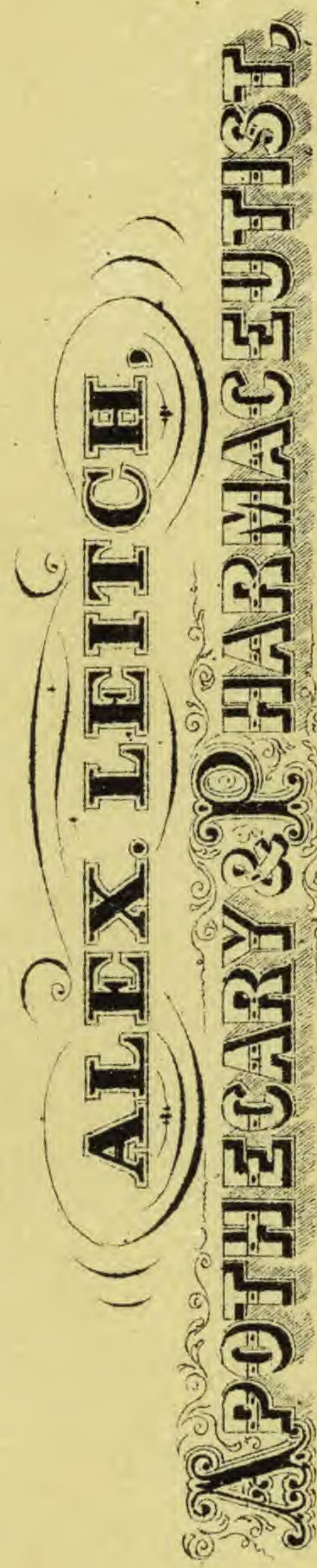
0 1 2 3 4 5 6 7 8 9 10

cm

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Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

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0

1

2

3

4

5

6

7

8

9

10

cm

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GARDEN

*Juniperus communis*.

Aug 16 1865

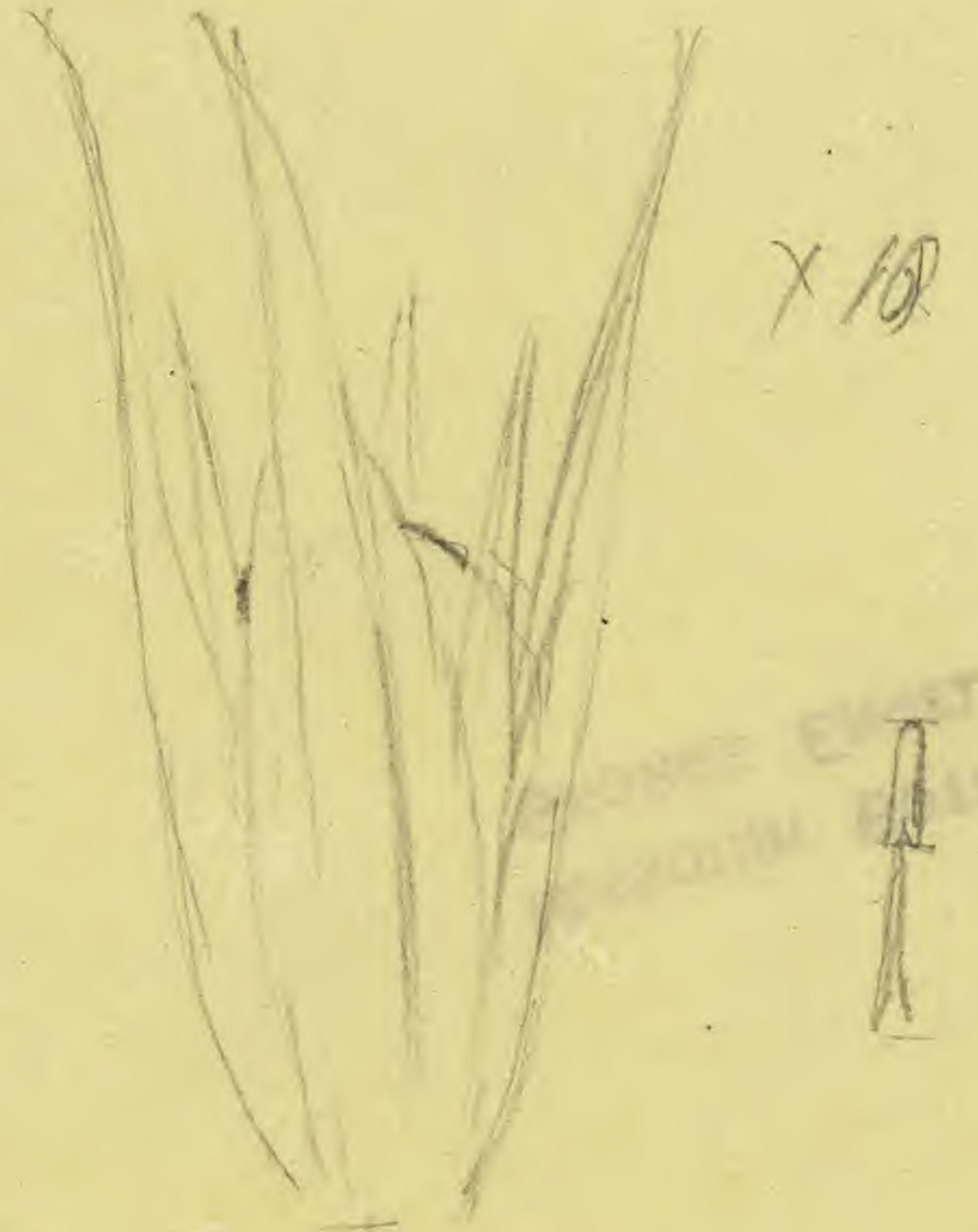
*Juliette L. Johnson*

x60

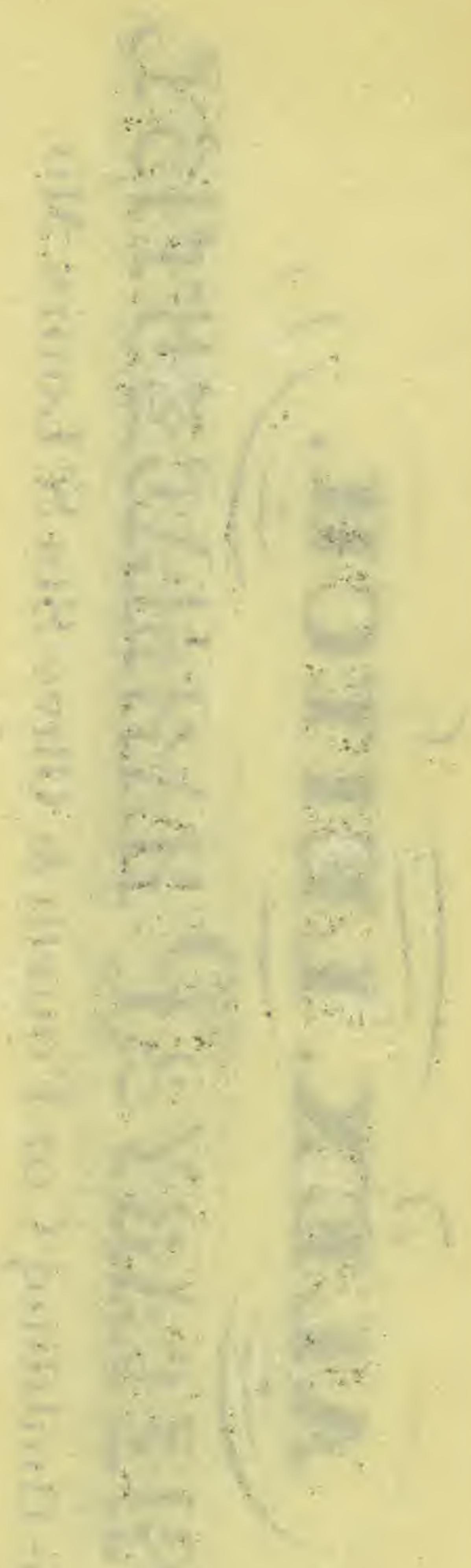


seed

scarcely marked



x 10



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

8886

ALEX. LEITCH,  
APOTHECARY & PHARMACEUTIST,  
Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

MISSOURI BOTANICAL GARDEN  
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0 1 2 3 4 5 6 7 8 9 10

cm

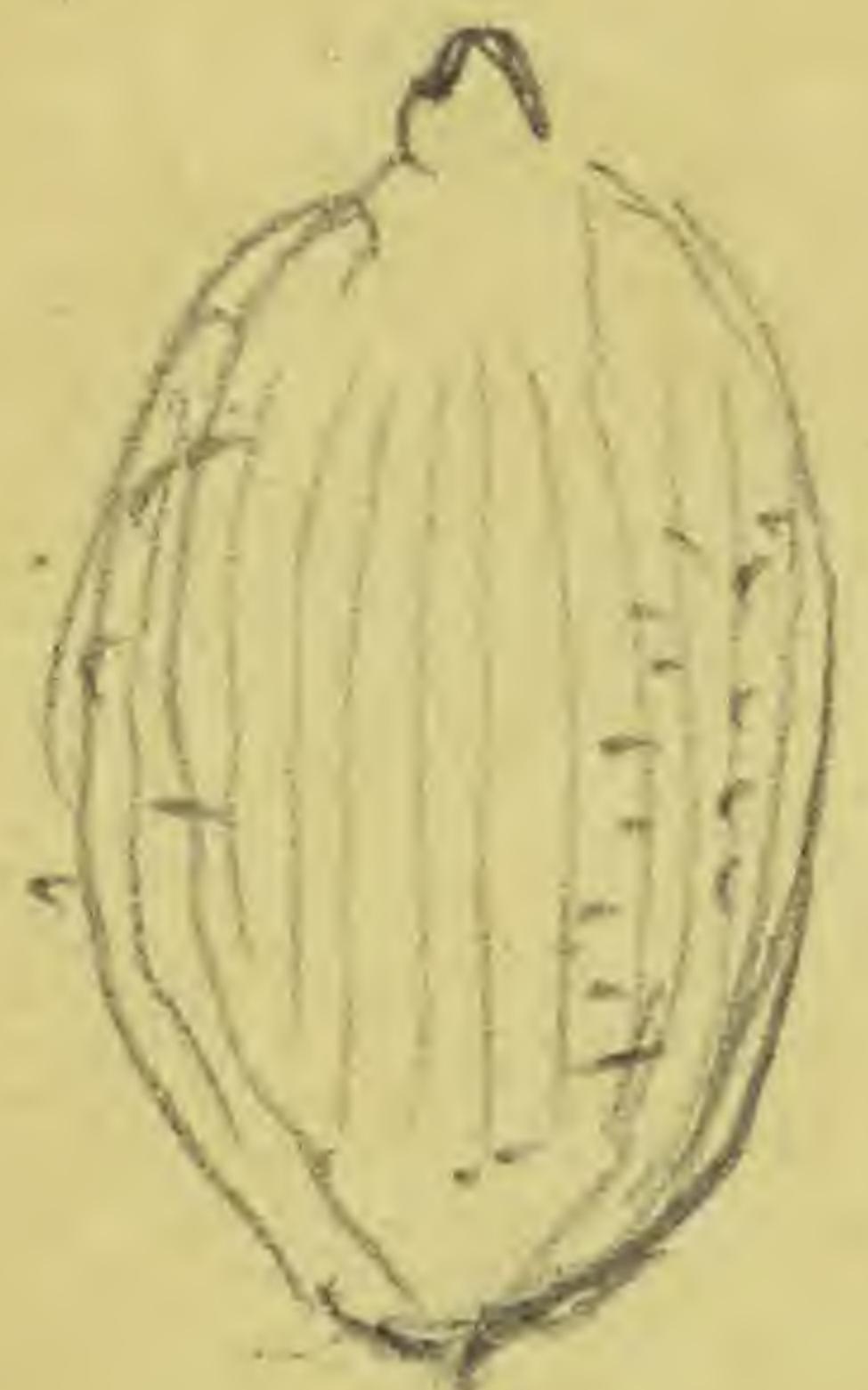
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MISSOURI  
BOTANICAL  
GARDEN

*J. bufonis*

x60



seed with

20-40

diotricha

ross - lineata = 0.33 - 0.45

width

20 - 27 mm 23

60

usually 0.38. mm

VEOLHEGVBL & HVBNTGEBEL long

inner sepals <sup>acute</sup> not much shorter than the outer ones, much longer than the retuse capsule.

HERBARIUM JUNCORUM BOREALI-AMERICANORUM NORMALE,

ed. G. Engelmann, St. Louis, Missouri, 1866.

28. *JUNCUS BUFONIUS*, LIN.

*Forma erecta sepalis subæqualibus capsulam retusam longe superantibus.*

In gravelly soil, margin of pools near Mendocino City, California, with shrubby *Pinus contorta*.

H. BOLANDER leg. Mai. 1866.



0 1 2 3 4 5 6 7 8 9 10

cm

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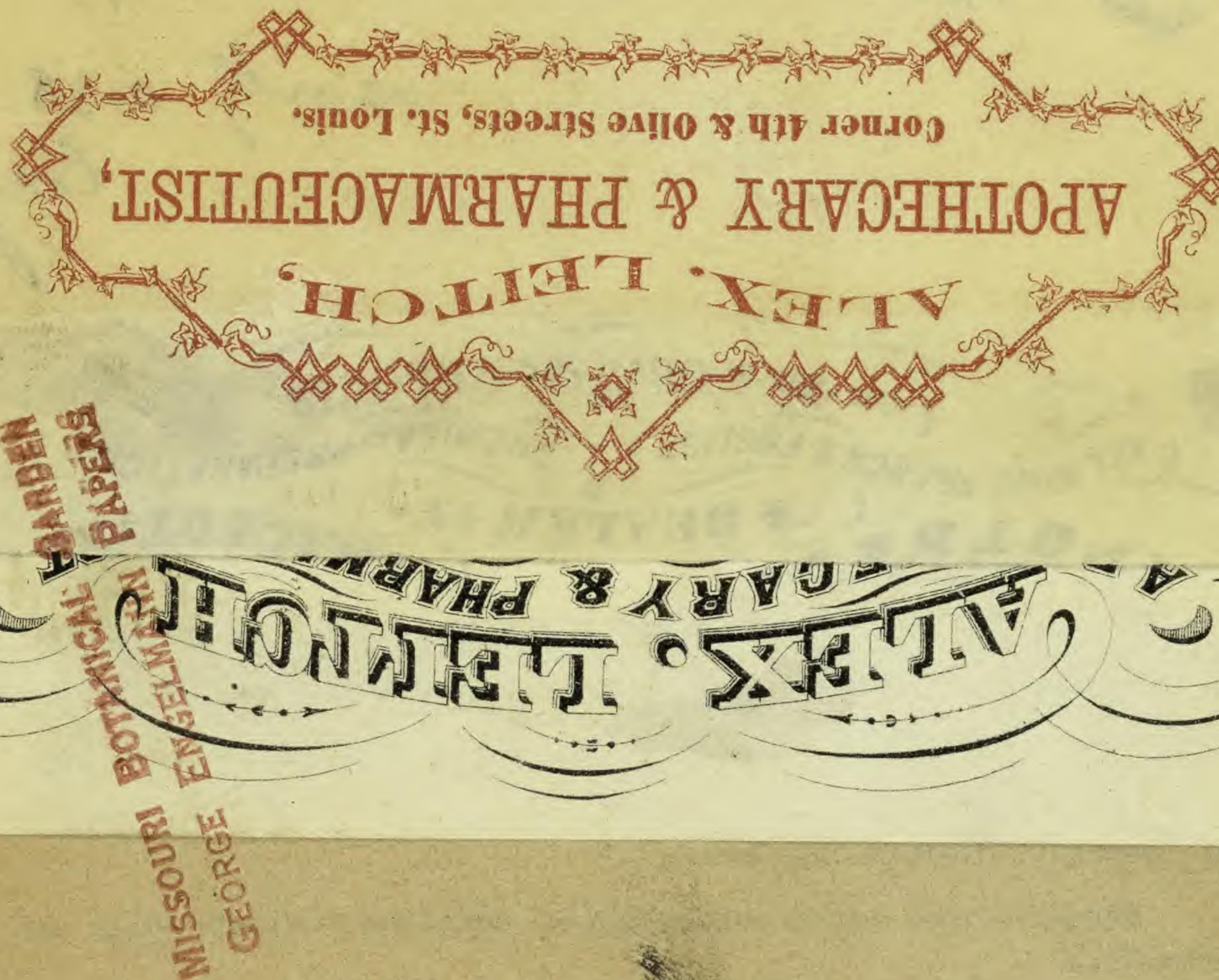


MISSOURI  
BOTANICAL  
GARDEN

92296

92293

92294



0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN

Isomeris bifloria

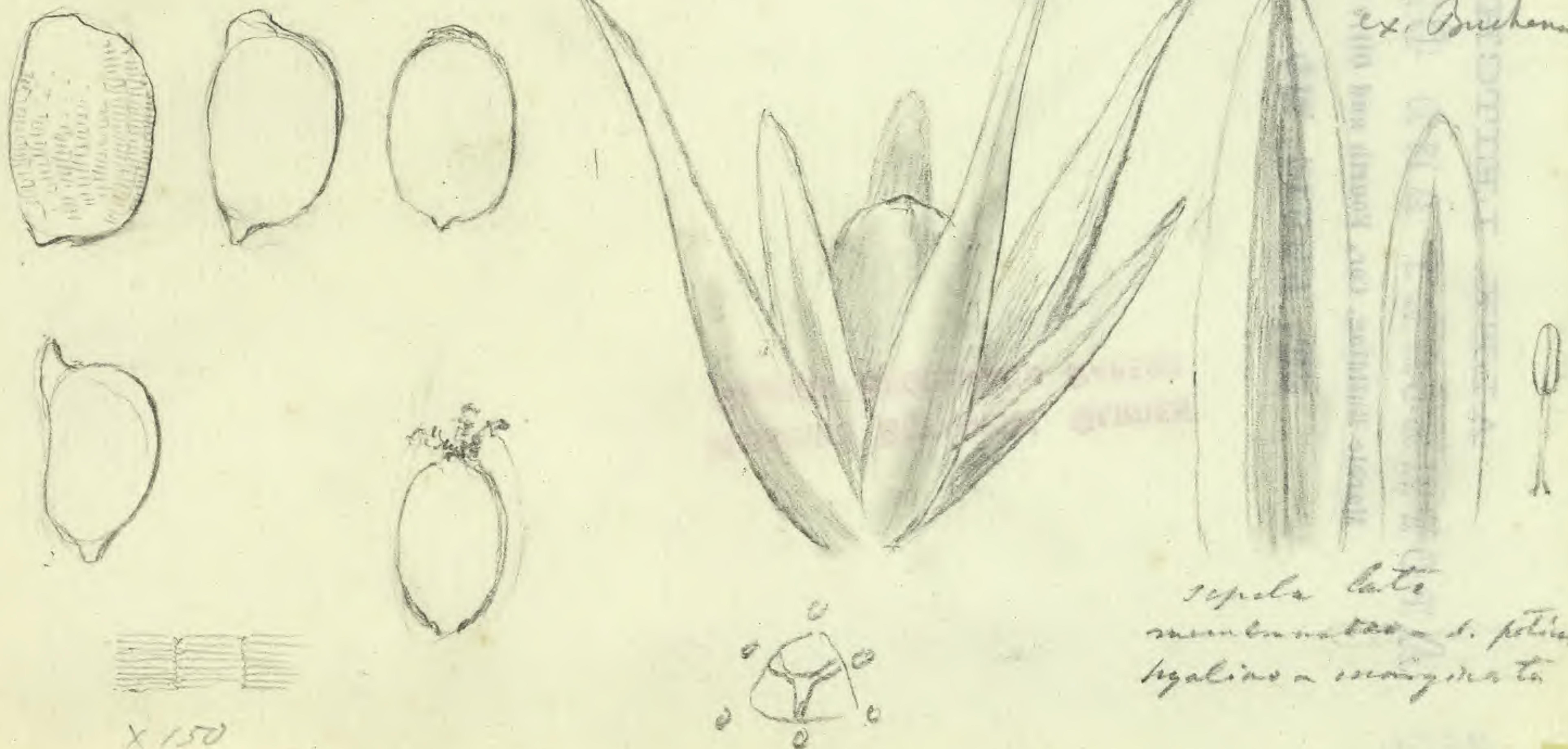
March 7 1866

fariniflora Boiss *B. fariniflora*, Koch

Charleston 1865 - 2 H. Smith 5718 Flor. Gen

*B. congesta* 1732

Kor. Bas.  
ex. Buchen



sepals late  
numerous st. petiol.  
hyaline a many mato



0 1 2 3 4 5 6 7 8 9 10

cm

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BOTANICAL  
GARDEN

ALEX. LEITCH,  
APPARTEMENT AND CUISINE,  
ST. LOUIS, MO.

Marble Building, Cor. Fourth and Olive Streets,

ST. LOUIS, MO.

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OCT 6



0 1 2 3 4 5 6 7 8 9 10

cm

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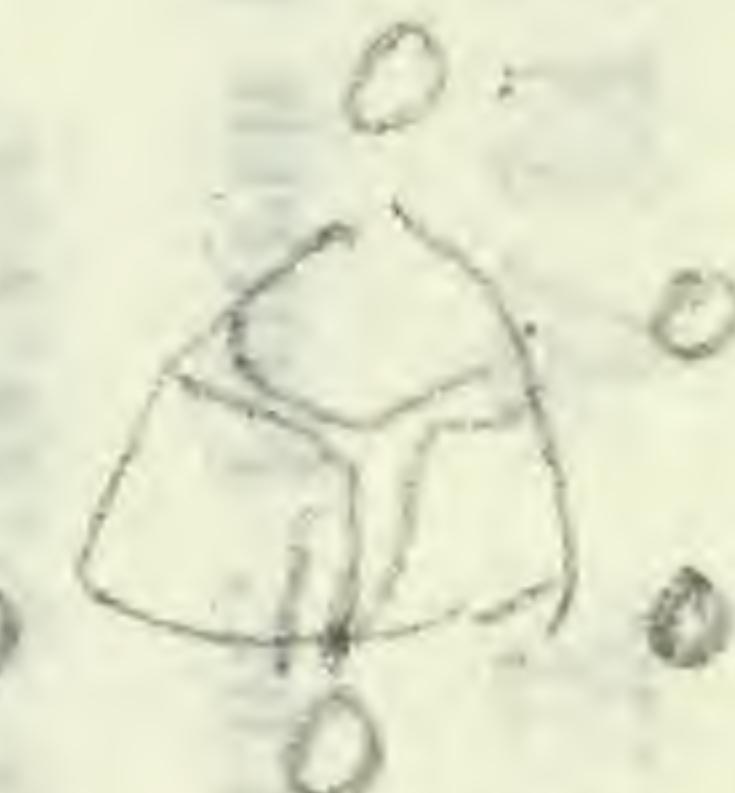
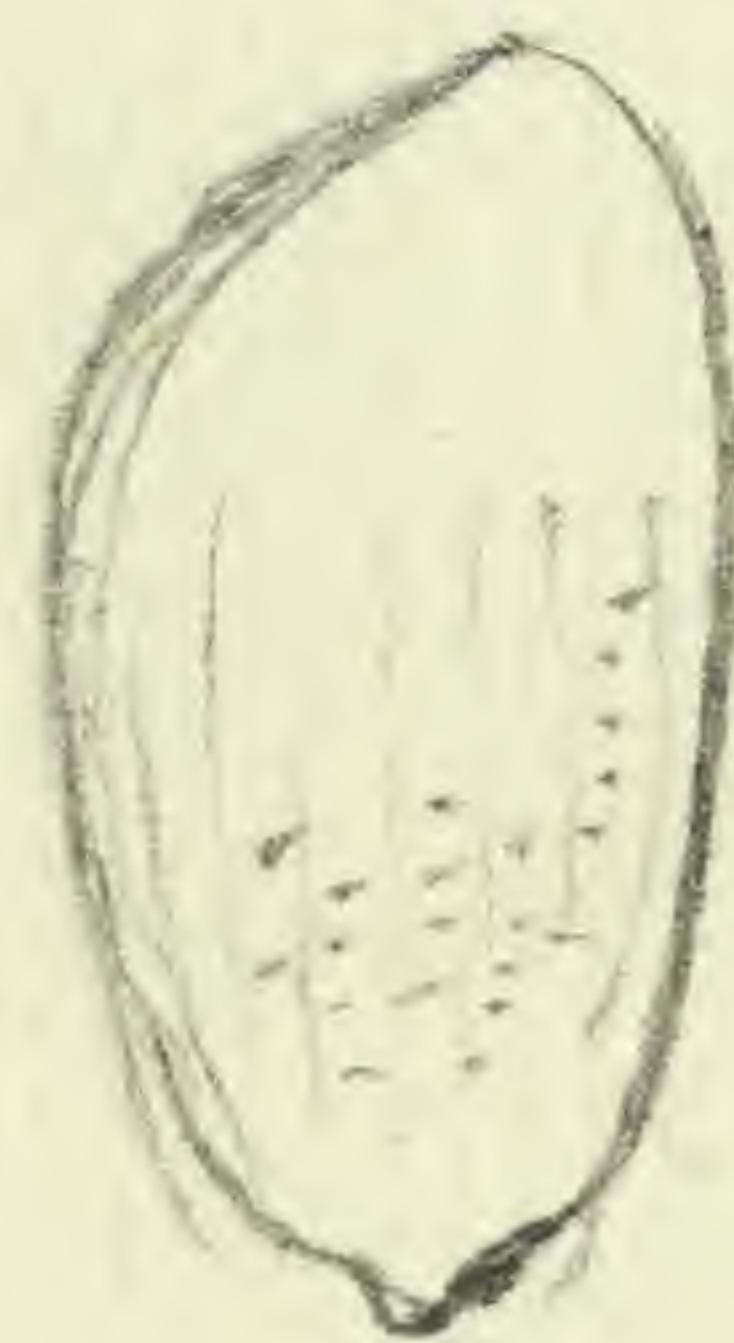
*J. C. fowleri*

minutus 1-2 pollicis

rami subuniiflori

Colomos & Hall 539  
part

March 10 1866



MISSOURI BOTANICAL GARDEN



MISSOURI  
BOTANICAL  
GARDEN



0 1 2 3 4 5 6 7 8 9 10

cm

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ALEX. TITTICH,  
APOTHECARY AND CHEMIST,  
Marble Building, Cor. Fourth and Olive Streets,  
ST. LOUIS, MO.

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GEORGE ENGELMANN PAPERS

1866



0 1 2 3 4 5 6 7 8 9 10  
cm

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MISSOURI  
BOTANICAL  
GARDEN

*J. confonius*  
varioliflora

Dec 11 1867

Southern Mississippi, Gulf coast.

E Holmgard

May 1859

×60



nearly smooth, shining  
even with maga 150  
only slight wrinkles, no  
regular striation recognized.



WILHELM FRIEDRICH GÖTTSCHE LOWE'S BOTANICAL GARDEN

NEW YORK PLATE



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

*286*

**ALEX. LEITCH,  
APOTHECARY & PHARMACEUTIST,**

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

MISSOURI BOTANICAL GARDEN  
MISSOURI BOTANICAL GARDEN PAPERS



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

Berlin Jun 15 1868

*J. G. Forster*

Dominis d'andras

Schleiden 1858

— H. A. Braun



*Onoclea sensibilis* hyalinae



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS

9233



0 1 2 3 4 5 6 7 8 9 10

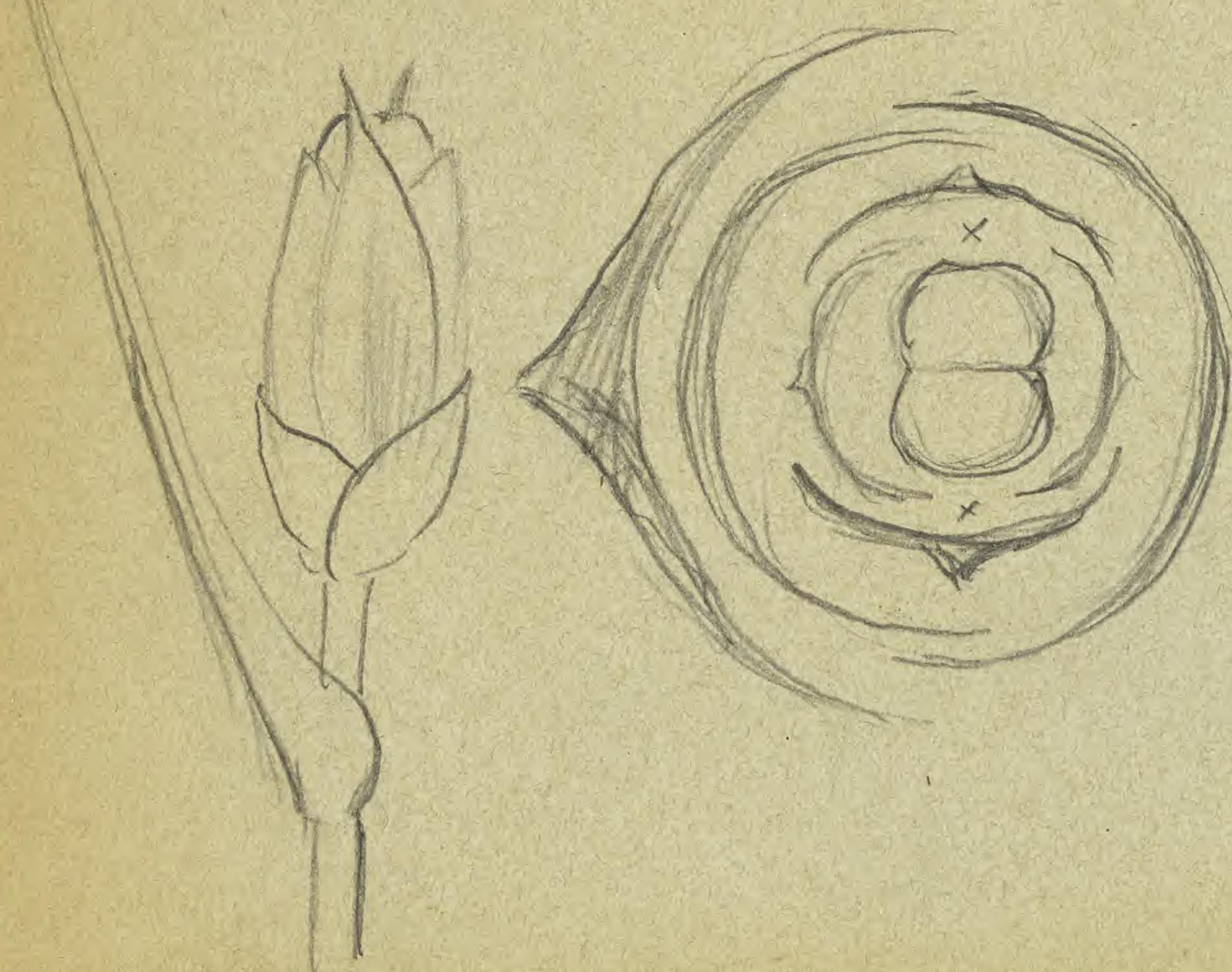
cm

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BOTANICAL  
GARDEN

*I. bufovaria dimorpha*  
of Braun's letter Aug 9<sup>th</sup> 1868



There ought to be  
2 anthers at X  
(not indicated in Braun's  
sketch)



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

9234

MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS



0

1

2

3

4

5

6

7

8

9

10

cm

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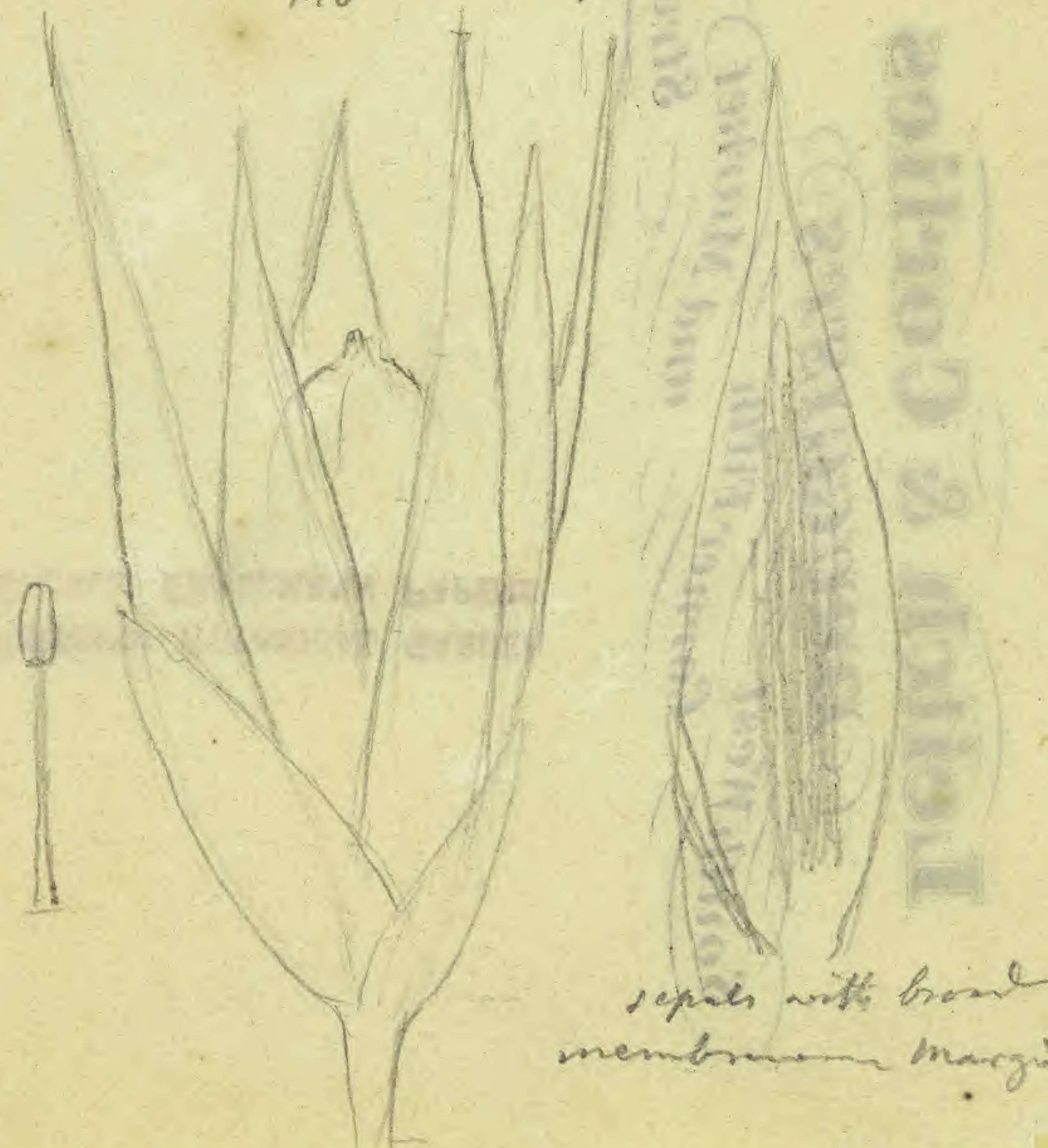


MISSOURI  
BOTANICAL  
GARDEN

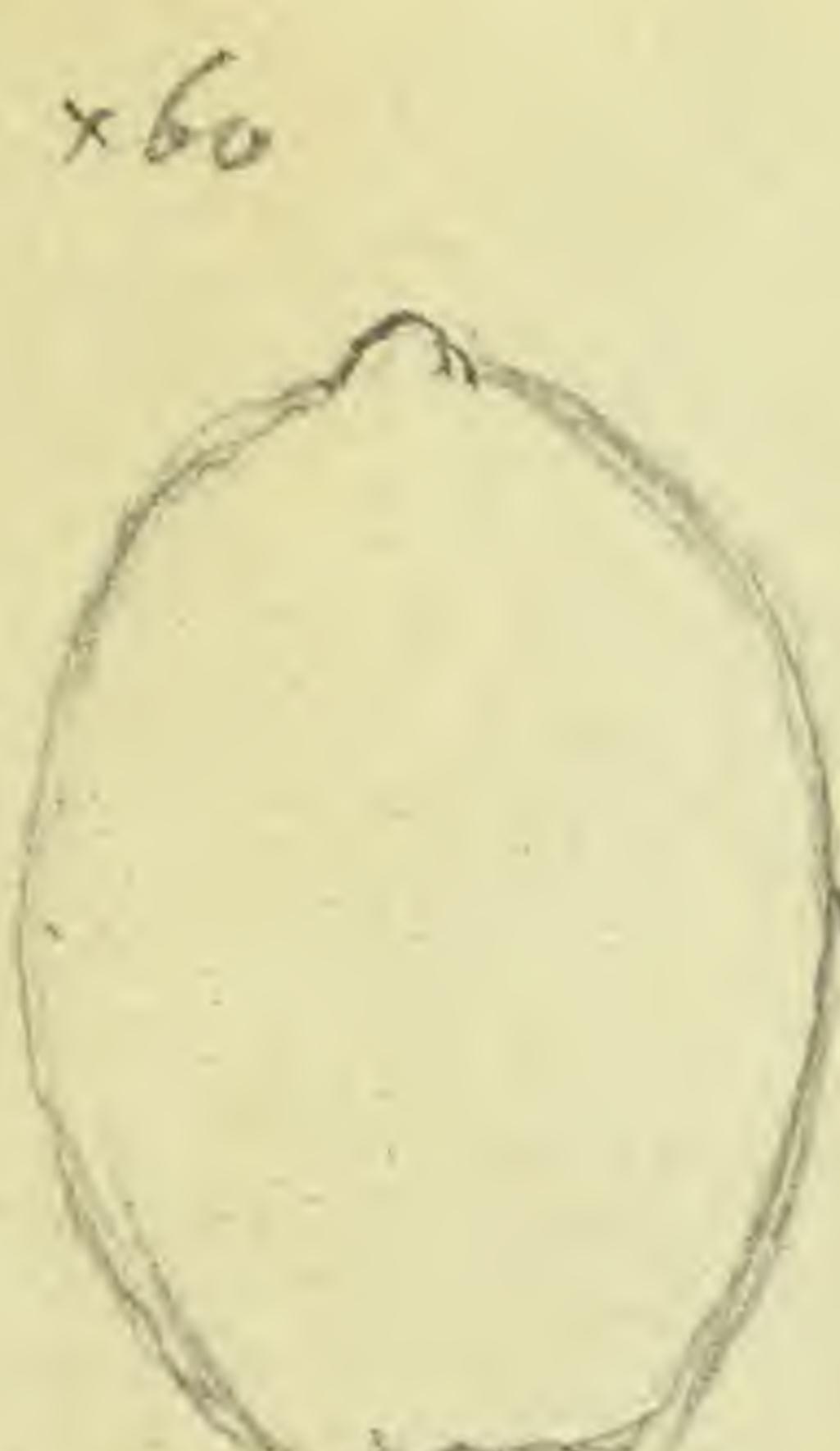
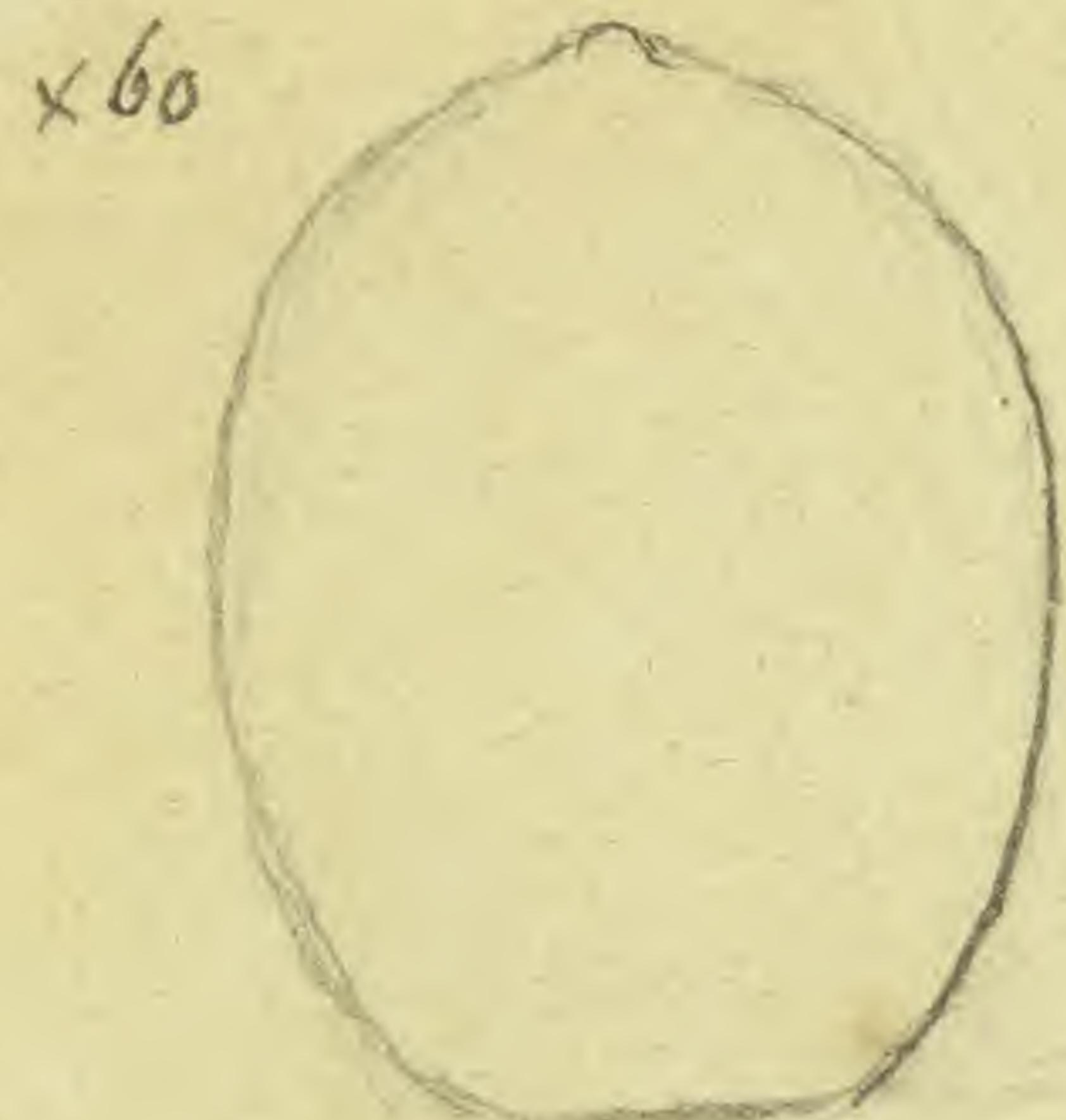
*Isomia bifolia* var.  
Sta. Cruz, prop. L. H. Bishop Oct 20 1881

M. A. Jones 1881

$\times 10$



sepals with broad  
membranous margin



seeds very variable  
in size

$\times 150$   
very indistinct  
marks of seed



0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI  
BOTANICAL  
GARDEN

Leitch & Corlies

DRUGGISTS

South West Corner Fifth and Market Streets

MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS

5235



0 1 2 3 4 5 6 7 8 9 10  
cm

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MISSOURI  
BOTANICAL  
GARDEN

June .....	1	4	1	1	1	3
July .....	2	4	1	1	1	3
August .....	3	1	1	1	4	2
September .....	4	1	1	1	7	8
October .....	3	1	1	1	7	1
November .....	2	3	3	7	7	7
December .....	2	3	3	7	7	6
	<u>50 + el.</u>	<u>36 + el.</u>	<u>23 — el.</u>	<u>28 — el.</u>	<u>15 no el.</u>	<u>34 no el.</u>

Snowing was accompanied

	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862.	In 1861.	In 1862.	In 1861.	In 1862.
January .....	3	9	2	1	...	...
February .....	12	8	...	...	...	...
March .....	3	12	...	...	...	...
October .....	...	1	...	...	...	...
November .....	5	4	...	...	...	...
December .....	5	2	2	...	1	1
	<u>23 + el.</u>	<u>36 + el.</u>	<u>2 — el.</u>	<u>3 — el.</u>	<u>...</u>	<u>1 no el.</u>

REMARKS.

The monthly mean of atmospheric electricity in 1862 was not quite so regular as that in 1861. While in 1861 an un-

272



MISSOURI  
BOTANICAL  
GARDEN



0 1 2 3 4 5 6 7 8 9 10  
cm

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or March, April, May and October; and the third with the lowest electricity by the months of June, July, August and September.

The aggregate monthly mean of

The first group in 1861 is 52.9—in 1862, 54.6
The second " " 33.5 " 35.2
The third " " 14.1 " 10.5

Thus in 1861 the third group prevailed, and in 1862 the first and second. But these differences are so well balanced throughout the year, that the mean of the whole year in 1861 and in 1862 is exactly the same, namely, 8.4. Such an identity in the yearly result, even to decimals, is of course not to be expected every year; but it seems to prove, at least, that the yearly mean of electricity is as constant as that of temperature, of relative humidity, and of atmospheric pressure.

The third table, showing the daily periodicity of atmospheric electricity, confirms the daily two maxima and two minima of electricity as an undeniable fact.



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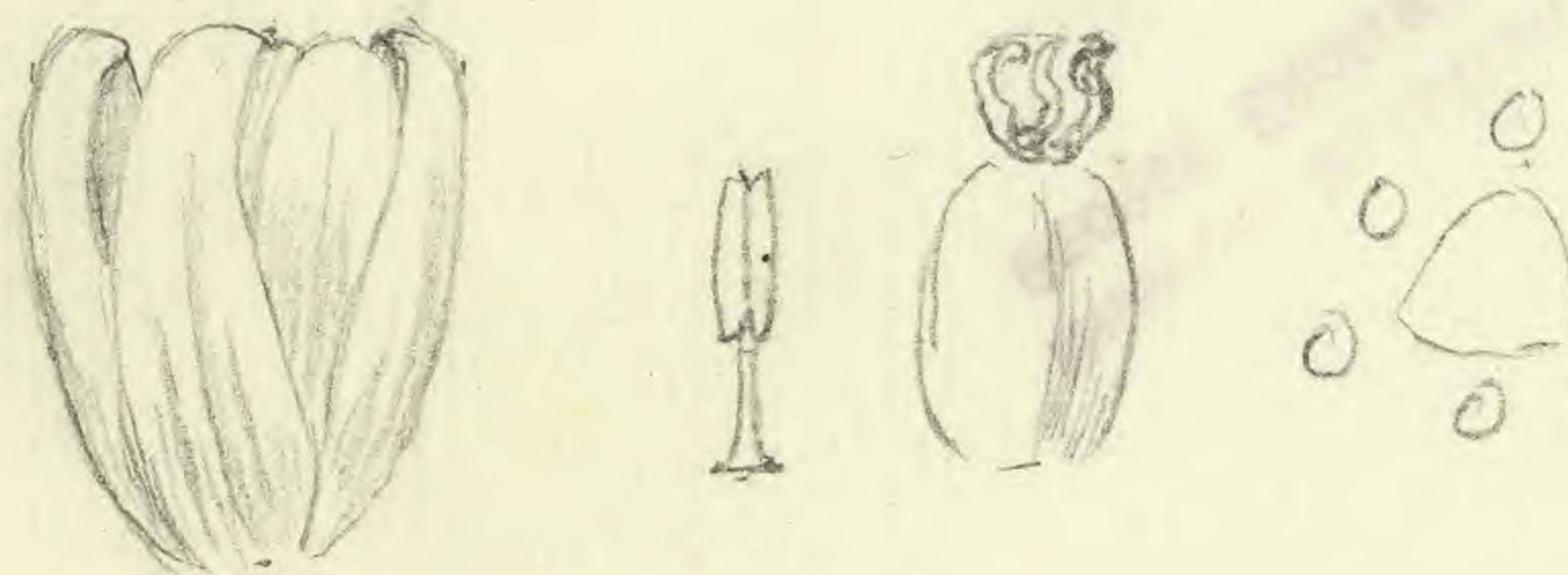
Korean Archipelago

March 23 1866

Oldham by

W. Gray

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